

Claims

What is claimed is:

1. A filter retrieval catheter, comprising:

an inner tube having a proximal end, a distal end, and an inner lumen extending therethrough;

an outer tube disposed over the inner tube, the outer tube including a proximal end and a distal end, wherein an annular lumen is defined between the inner tube and the outer tube; and

a tip member slidably disposed in the lumen for movement between a first position and a second position.
2. The filter retrieval catheter in accordance with claim 1, wherein a quantity of fluid is disposed within the annular lumen.
3. The filter retrieval catheter in accordance with claim 1, wherein, in the first position at least a portion of the tip member extends distal of the distal end of the outer tube.
4. The filter retrieval catheter in accordance with claim 1, wherein, in the second position comprises the member tip is disposed proximal to the distal end of the outer tube.

5. The filter retrieval catheter in accordance with claim 1, further comprising a shaft disposed within the inner lumen.

6. The filter retrieval catheter in accordance with claim 5, wherein the shaft includes a filter coupled to the shaft.

7. A filter retrieval catheter, comprising:
an inner tube having a proximal end, a distal end, and an inner lumen extending therethrough;

an outer tube disposed over the inner tube, the outer tube including a proximal end and a distal end; wherein an annular lumen is defined between the inner tube and the outer tube; and

a tip member coupled in fluid communication to the lumen, wherein the tip member includes a rolling member in fluid communication with the annular lumen, the rolling member adapted and configured to transition between a first position and a second position.

8. The filter retrieval catheter in accordance with claim 7, wherein, in the first position at least a portion of the rolling member is disposed proximal to the distal end of the inner tube.

9. The filter retrieval catheter in accordance with claim 7, wherein, in the second position at least a portion of the rolling membrane extends distally of the distal end of the inner tube.

10. A method of retrieving a filter from a blood vessel, comprising the steps of:

providing a catheter having a distal tip movable between first and second positions under the influence of fluid pressure;

advancing the catheter to the filter;

altering the fluid pressure to allow the tip to move between the first and the second position;

enclosing the filter at least in part within the catheter; and

removing the catheter and filter proximally from the blood vessel.

11. The method in accordance with claim 10, wherein the step of altering the fluid pressure includes decreasing the fluid pressure, and wherein decreasing the fluid pressure shifts the tip from the first position to the second position.

12. The method in accordance with claim 10, wherein the step of altering the fluid pressure includes increasing the fluid pressure, and wherein increasing the fluid pressure shifts the tip from the first position to the second position.